

Message (Digitally Signed)

From: Robinson, Derek J CIV USN NAVFAC SW SAN CA (USA) [derek.j.robinson1@navy.mil]
Sent: 9/13/2019 3:05:13 PM
To: Nguyen, Lyndsey [Nguyen.Lyndsey@epa.gov]; Craig Bias [cbias@remwerks.com]; Praskins, Wayne [Praskins.Wayne@epa.gov]
CC: Liscio, Matthew P CIV USN NAVSEA DET RASO VA (USA) [matthew.liscio@navy.mil]
Subject: RE: BPRG calc files
Attachments: smime.p7s

A conference call sounds like a great idea, Lyndsey! I will make myself available...and let me know if I can assist setting up the meeting.

Thank you for again for working on this!

Derek

-----Original Message-----

From: Nguyen, Lyndsey <Nguyen.Lyndsey@epa.gov>
Sent: Thursday, September 12, 2019 6:13 PM
To: Craig Bias <cbias@remwerks.com>; Praskins, Wayne <Praskins.Wayne@epa.gov>; Robinson, Derek J CIV USN NAVFAC SW SAN CA (USA) <derek.j.robinson1@navy.mil>
Cc: Liscio, Matthew P CIV USN NAVSEA DET RASO VA (USA) <matthew.liscio@navy.mil>
Subject: [Non-DoD Source] RE: BPRG calc files

Hi Craig,

Phew! This past week, I was varying every parameter to determine which input assumptions were used for calculating the risk values in the spreadsheet. This list gives me a great idea of your site conceptual model. Thank you!

Just at a glance, I know that I have made a few different initial assumptions:

- Adult exposure duration = 20 years,
- Adult lifetime = 9490days,
- Room size was 10ft x 10ft x 10ft--I just went with the smallest room size as a start, etc.

Oh, also one quick question: which library did you use? I know this will have a pretty big impact on how risk is pulled from the report, or if side calculations are needed.
Thanks again for all of the great info, Craig!

Hey Derek, I thought our last PRG-Soil and BPRG discussion was a great way to collaborate on the best path forward. I would love to have a similar discussion for ResRad-Build. Let me and Wayne spend some time next week to look more thoroughly into Craig's input assumptions. Then, Wayne could follow up with you on a proposed future conference call date/time?

Hope all is well with everyone!

Thanks,

Lyndsey Nguyen
Health Physicist
Environmental Response Team-Las Vegas
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Cell: 702-373-3756
Email: Nguyen.Lyndsey@EPA.gov

-----Original Message-----

From: Craig Bias [mailto:cbias@remwerks.com]
Sent: Thursday, September 12, 2019 12:24 PM
To: Praskins, Wayne <Praskins.Wayne@epa.gov>; Robinson, Derek J CIV USN NAVFAC SW SAN CA (USA) <derek.j.robinson1@navy.mil>
Cc: Nguyen, Lyndsey <Nguyen.Lyndsey@epa.gov>
Subject: RE: BPRG calc files

Lyndsey,

I don't save the .BLD files so I would have to reconstruct them. But there are few input changes and they are all outlined below:

The following changes from defaults were used in RESRAD-BUILD 3.5:

Child resident exposures

- Exposure duration = 365 d/y x 6 yr = 2190 d
- Indoor fraction = 50 wk/y / 52 wk/y = 0.96
- Time fraction (time in compartment; time exposed to source) = 16 h/d / 24 h/d = 0.67
- Breathing rate = 10 m³/h (EPA Exposure Factors Handbook, 2015, Table 6-1)
- Ingestion rate = 0.0002 m²/h (RESRAD default for adults is 0.0001 m²/h; EPA Exposure Factors Handbook, 2017, Table 5 -1 indicates child rate is twice that of adult)
- Receptor location = 5m, 5m, 0.5m (assume toddler breathing zone is half height of adult)
- Area source in z-direction at 5m, 5m, 0m
- Removable fraction = 0.2 (20% to match assumption used in HPNS 2006 Action Memorandum to generate current RGs)
- Lifetime = exposure duration = 2190 d (source concentration is reduced through exposures, cleaning, foot traffic, etc. and assumed to decrease linearly over entire exposure duration)
- Th-232 and Ra-226 modeled with daughters in secular equilibrium

Adult resident exposures

- Exposure duration = 365 d/y x 25 yr = 9125 d
- Indoor fraction = 50 wk/y / 52 wk/y = 0.96
- Time fraction (time in compartment; time exposed to source) = 16 h/d / 24 h/d = 0.67
- Breathing rate = 16 m³/h (EPA Exposure Factors Handbook, 2015, Table 6-1)
- Ingestion rate = 0.0001 m²/h (RESRAD default)
- Receptor location = 5m, 5m, 1m
- Area source in z-direction at 5m, 5m, 0m
- Removable fraction = 0.2 (20% to match assumption used in HPNS 2006 Action Memorandum to generate current RGs)
- Lifetime = exposure duration = 9125 d (source concentration is reduced through exposures, cleaning, foot traffic, etc. and assumed to decrease linearly over entire exposure duration)
- Th-232 and Ra-226 modeled with daughters in secular equilibrium

Indoor worker exposures

- Exposure duration = 365 d/y x 25 yr = 9125 d
- Indoor fraction = 50 wk/y / 52 wk/y = 0.96
- Time fraction (time in compartment; time exposed to source) = 8 h/d / 24 h/d = 0.33
- Breathing rate = 16 m³/h (EPA Exposure Factors Handbook, 2015, Table 6-1)
- Ingestion rate = 0.0001 m²/h (RESRAD default)
- Receptor location = 5m, 5m, 1m
- Area source in z-direction at 5m, 5m, 0m
- Removable fraction = 0.2 (20% to match assumption used in HPNS 2006 Action Memorandum to generate current RGs)
- Lifetime = exposure duration = 9125 d (source concentration is reduced through exposures, cleaning, foot traffic, etc. and assumed to decrease linearly over entire exposure duration)
- Th-232 and Ra-226 modeled with daughters in secular equilibrium

The risk values in the spreadsheet come from the Last Risk Report output in BUILD v3.5. For those chains that have progenies in equilibrium, their risk are summed as shown in the spreadsheet. As with all RESRAD codes, if the progeny half life is less than the Half Life Cut Off (default = 180 days) then its dose and risk are rolled into those of its parent. I can talk you through it if you need help.

Craig

Craig-Alan Bias, PhD, CHP, RRPT

Principal

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Ex. 6 Personal Privacy (PP)

-----Original Message-----

From: Praskins, Wayne <Praskins.Wayne@epa.gov>

Sent: Wednesday, September 11, 2019 6:18 PM

To: Robinson, Derek J CIV USN NAVFAC SW SAN CA (USA) <derek.j.robinson1@navy.mil>

Cc: Craig Bias <cbias@remwerks.com>; Nguyen, Lyndsey <Nguyen.Lyndsey@epa.gov>

Subject: RE: BPRG calc files

Derek -

Lyndsey has taken an initial look at the building files you sent on 8/22 and 8/27. To help with our review, we have three requests. Can you provide:

- 1) the RESRAD BUILD *.bld files associated with results you sent on 8/22
- 2) an explanation of how the risk values in the spreadsheet were generated
- 3) who Lyndsey can contact if she has questions about RESRAD BUILD inputs or assumptions.

Thanks.

Wayne Praskins | Superfund Project Manager U.S. Environmental Protection Agency Region 9

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-----Original Message-----

From: Robinson, Derek J CIV USN NAVFAC SW SAN CA (USA) <derek.j.robinson1@navy.mil>
Sent: Tuesday, August 27, 2019 4:53 PM
To: Praskins, Wayne <Praskins.Wayne@epa.gov>
Cc: Craig Bias <cbias@remwerks.com>
Subject: BPRG calc files

Hi Wayne,

Please see the attached output files from a February run that Craig performed.

Derek